AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of supporting mobility ~~(400, 500)~~ in an Internet Protocol (IP)-based data network, the method characterised by the steps of:

generating a first stateful IP autoconfiguration message at a mobile node, wherein said message contains an address capable of use for route maintenance to/from said mobile node;

transmitting, by said mobile node, said generated message to a first access node, where said access node adds its address to said message;

forwarding said generated message, by an access node, to a dynamic host configuration protocol (DHCP) Server;

analysing said message, at said DHCP server, to determine a route to deliver data to and/or from said mobile node;

analysing said message, at said access node, to determine a route to deliver data to and/or from said mobile node; and

triggering one or more route update messages from said access node and said DHCP server to a number of network elements ~~(230)~~ between said access node and said DHCP server in the IP based data network.

2. (Currently Amended) The method of supporting mobility ~~(400, 500)~~ according to Claim 1, the method further characterised by the steps of:

repeating said steps of generating, transmitting ~~(420)~~ and forwarding for a second stateful IP autoconfiguration message when said mobile node attaches to a second access node;

analysing said second message at said DHCP Server to determine that said second address used for route maintenance in said second message is inconsistent with said first address analysed in said first message; and

triggering a route update message based on said determination.

3. (Currently Amended) The method of supporting mobility ~~(400, 500)~~ according to Claim 2, the method further characterised by the step of:

transmitting, in response to said determination, a deletion message ~~(540)~~ to said first access node ~~(240)~~ or said second access node ~~(250)~~ and a number of network elements ~~(230)~~ between said DHCP Server ~~(220)~~ and said first access node ~~(240)~~ or said second access node ~~(250)~~, where the deletion message instructs said number of network elements to delete obsolete address information used for route maintenance to/from said mobile node.

4. (Currently Amended) The method of supporting mobility ~~(400, 500)~~ according to Claim 1 ~~or Claim 2 or Claim 3~~, wherein said first and/or second stateful Internet Protocol autoconfiguration message is a DHCPv6 'CONFIRM' message.

5. (Currently Amended) The method of supporting mobility ~~(400, 500)~~ according to ~~any preceding~~ Claim 1, wherein said address information used for route maintenance is based on a distance-vector routing protocol, for example the routing information protocol (RIP).

6. (Currently Amended) The method of supporting mobility ~~(400, 500)~~ according to ~~any preceding~~ Claim 1, further characterised by the step of:

updating route maintenance information by a plurality of nodes in the IP-based data network, for example a DHCP Server ~~(220)~~, an access node such as a DHCP Relay or an Access router ~~(250)~~, and an intermediate router ~~(234)~~.

7. (Currently Amended) An access node~~, for example a dynamic host configuration protocol (DHCP) Relay (250)~~ comprising:

a receiving function receiving at least one first Internet Protocol (IP) message from a mobile node, wherein said at least one first IP message comprises a mobile node address capable of use for route maintenance to deliver data to and/or from said mobile node; and

a processor, operably coupled to said receiving function, wherein said processor analyses said at least one first IP message, to determine a route to deliver data to and/or from said mobile node and triggers a transmission of one or more route update message from said access node ~~(250)~~ to a number of network elements ~~(230)~~ between said access node and a DHCP server in the IP based data network.

8. (Currently Amended) A dynamic host configuration protocol DHCP Server ~~(320)~~ comprising:

a receiving function ~~(325)~~ for receiving at least one first Internet Protocol (IP) message from a mobile node through a first access node, wherein said at least one first IP message comprises a number of addresses used for route maintenance to deliver data to and/or from said mobile node via said first access node; and

a processor ~~(330)~~, operably coupled to said receiving function, wherein said processor analyses said at least one first IP message, to determine a route to deliver data to and/or from said mobile node and triggers a transmission of one or more route update message from said DHCP server to a number of network elements ~~(230)~~ between said access node and said DHCP server in the IP based data network.

9. (Currently Amended) The DHCP Server according to Claim 8, wherein said DHCP Server ~~(320)~~ receives and analyses at least one second IP message comprising a second set of addresses capable of use for route maintenance from said mobile node through a second access node, such that said processor analyses said at least one second IP message to determine whether said second set of addresses are consistent with said first set of addresses.

10. (Currently Amended) The DHCP Server according to Claim 9, wherein said DHCP Server ~~(320)~~ further characterised by said processor ~~(330)~~, in response to said determination, triggering a route update message to said first access node or triggering a route update message to said second access node to delete obsolete address information used for route maintenance to/from said mobile node.

11. (Currently Amended) The DHCP Server according to ~~any of preceding~~ Claims 8 ~~to~~ ~~10~~, wherein said at least one first IP message and said at least one second IP message are IPv6 messages.

12. (Currently Amended) The DHCP Server according to ~~any of preceding~~ Claims 9 ~~to~~ ~~11~~, wherein said at least one first IP message and/or said at least one second IP message is an IPv6 stateful autoconfiguration 'CONFIRM' message.

13. (Currently Amended) The DHCP Server according to ~~any of preceding~~ Claims 8 ~~to~~ ~~12~~, the DHCP Server further characterised by:

a memory element, operably coupled to said processor, containing a router table for storing route maintenance information extracted from said first and/or second IP message.

14. (Currently Amended) A data communication network adapted to incorporate the DHCP Server of ~~any of~~ Claims 8 ~~to 13 or the access node of Claim 7 or adapted to facilitate the method steps of any of Claims 1 to 6~~.

15. (Original) The data communication network according to Claim 14, wherein said first access node and/or said second access node are Access Routers collocated with DHCPv6 Relay functions.

16. (Currently Amended) The data communication network according to Claim 14 ~~or Claim 15~~, wherein the data communication network includes a number of routers located between said first access node and/or said second access node and said DHCP Server in a substantially tree-type topology.

17. (Currently Amended) The data communication network according to ~~any of preceding~~ Claims 14 ~~to 16~~, wherein a communication link between said mobile node and said first access node and/or said second access node is a wireless access media communication link to facilitate a wireless link.

18. (Currently Amended) An IPv6 communication message transmitted from a DHCP Server to an access node via a number of routers, wherein the IPv6 communication message comprises route and/or address deletion instructions generated in accordance with Claim 3 ~~or Claim 10~~.

19. (Currently Amended) A storage medium storing processor-implementable instructions for controlling a processor to carry out the method according to ~~any of~~ Claims 1 ~~to 6~~.

20. (Currently Amended) An apparatus adapted to perform the method steps according to ~~any of~~ Claims 1 ~~to 6~~.

21. (cancelled)

22. (cancelled)

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